

# Select Committee on Capital Finance & Investments

SEPTEMBER 15<sup>TH</sup>, 2017

WYOMING TREASURER'S OFFICE



# Agenda

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## **Additional Materials:**

SLIB Matter D-2: State Investment Policy Annual Review and Update

SLIB Matter D-4: State Investment Allocation Presentation

SLIB Matter D-5: State Investment Allocation Changes

Howard Marks White Paper

Public Purpose Investments

Large Project Loan Program:

- Potential Legislative Changes
- Progress of Projects

# Asset Allocation

- The roll of the Treasurer's office is to manage the amount of money that we invest in each asset class. Each year, the Treasurer's office and our consultant, RVK, collaborate to review the capital market environment and update long-term, forward-looking capital market expectations for each asset class.
- The forecast horizon is for long-term periods over multiple market cycles, typically 10 years. The components we estimate include: Return, Risk (volatility of returns), Correlation (relationship of asset class returns with all other asset classes).
- Each asset class is reviewed and a minimum and maximum dollar amount is established for that year. We change the allocations as the amount invested in each asset class fluctuates within these bands.
- An example of this happened on 3/24/17. Our overall equity investment was \$225 million above our neutral weight. We sold \$200 million of equities and realized a gain of approximately \$38 million.

\*RVK & Vanguard

# Asset Allocation: Recent Changes

- This year we made major changes to the way we invest across our funds.
- Wyoming's asset allocation historically was split into two categories: permanent and non-permanent funds. The permanent funds had allocations to equities and alternatives while the non-permanent funds were primarily invested in bonds.
- Last spring, the Treasurer set up a two day seminar to help educate the SLIB members, legislators, agencies and the public on how assets are allocated across the funds. The new allocations were approved during the April 6<sup>th</sup>, 2017 SLIB meeting.
- The nine funds were split into separate categories to match their long-term objective with an asset allocation that meets income needs, liability structure, liquidity needs and a relatively higher long-term return.
- When we change managers and/or asset allocations, we normally incur more capital gains or losses than an average year.

# New Asset Allocations

- **Long-term total return = PMTF, Permanent Land Fund, University Permanent Land Fund and Hathaway.** Improve the likelihood of achieving each pool's long-term return objectives, focusing on long-term total return based returns in accordance with spending policy goals and needs.
- **Income oriented funds = Common School and Higher Education.** Focusing on income generation based returns in accordance with spending policy goals and needs. This strategy will also improve the likelihood of achieving each pool's long-term return objectives.
- **Long duration fund = Workers Compensation.** This fund was changed to tenure match its liabilities with its assets. Workers compensation liabilities are over 10 years. This will help preserve the funds fiscal health with a healthy funded status.
- **Diversified with new equity exposure = Plan A (Formerly Tobacco Settlement + Trusts).** Introduce public equity and alternative investments in a thoughtful manner such that the overall risk profile remains appropriate.
- **Short duration with high liquidity = State Agency Pool.** Focus on aligning the risk profile appropriately with the needs of the constituent investors. Emphasis on risk reduction and capital preservation to help mitigate significant short-term draw downs.

# Capital Gains and Losses

Net Asset Value Summary-All Accts as of 6/30/17  
Unrealized Gain (Loss) & Realized Income (Loss) by Manager  
June 30, 2017

<u>Asset Class &amp; Manager</u>	Cost	Market Value	Unrealized Gain/Loss	FY17 YTD Dividends & Interest	FY17 YTD Realized Gain/(Loss)
US Equity	\$ 1,850,814,984	\$ 2,254,550,255	\$ 403,735,271	\$ 45,671,618	\$ 127,200,351
Global Equity	\$ 379,181,793	\$ 426,401,778	\$ 47,219,985	\$ 10,384,280	\$ 44,991,468
International Equity	\$ 1,474,990,771	\$ 1,672,665,173	\$ 197,674,402	\$ 38,081,424	\$ (1,148,447)
Private Equity	\$ 417,723,851	\$ 571,623,081	\$ 153,899,230	\$ 3,680,311	\$ 64,990,976
Real Estate	\$ 765,468,117	\$ 850,441,638	\$ 84,973,521	\$ 26,806,820	\$ 20,552,126
Absolute Return	\$ 499,635,960	\$ 508,028,942	\$ 8,392,982	\$ 23,034	\$ 7,476,383
Convertible Bonds	\$ 486,668,624	\$ 517,843,821	\$ 31,175,197	\$ 15,473,506	\$ 99,861
Fixed Income	\$ 9,051,538,613	\$ 9,001,160,017	\$ (50,378,597)	\$ 287,972,198	\$ (40,195,921)
Internal Portfolio	\$ 2,547,984,119	\$ 2,573,039,000	\$ 25,054,880	\$ 9,528,763	\$ 620,861
Public Purpose Investments	\$ 811,819,612	\$ 811,819,612	held at cost	\$ 21,550,688	\$ -
Cash Equivalents	\$ 1,537,818,657	\$ 1,538,608,117	\$ 789,460	\$ 9,170,759	\$ (2,479,380)
Securities Lending				\$ 7,645,285	\$ -
<b>TOTALS:</b>	<b>\$ 19,823,645,102</b>	<b>\$ 20,726,181,435</b>	<b>\$ 902,536,332</b>	<b>\$ 475,988,685</b>	<b>\$ 222,108,278</b>

# History of Capital Gains and Losses

- Gains are correlated to increases in the stock and bond markets.
- Total gains as a percentage of AUM is normally greater than 5%.

Date	Realized Gains -WSTO	Unrealized Gains -WSTO	Gross Dividends/Interest	Totals	Barclays Aggregate TR	S&P Index TR	AUM	Total Gains/AUM
30-Jun-05	-	\$ 169,137,051.00	\$ 245,920,533.67	\$ 415,057,584.67	6.802	4.426	\$ 6,507,766,340.08	-
30-Jun-06	-	\$ 212,801,023.42	\$ 327,757,107.63	\$ 540,558,131.05	-0.805	6.620	\$ 8,191,200,820.14	-
30-Jun-07	\$ 60,283,374.04	\$ 596,452,089.00	\$ 366,605,652.28	\$ 1,023,341,115.32	6.121	18.355	\$ 9,398,763,804.39	6.99%
30-Jun-08	\$ 307,185,358.37	\$ 288,672,657.69	\$ 416,219,751.50	\$ 1,012,077,767.56	7.123	-14.857	\$ 11,171,106,916.60	5.33%
30-Jun-09	\$ (201,091,974.97)	\$ (647,108,349.48)	\$ 429,108,648.97	\$ (419,091,675.48)	6.047	-28.178	\$ 10,909,355,351.36	-7.77%
30-Jun-10	\$ 107,113,917.00	\$ (73,206,066.14)	\$ 385,350,915.00	\$ 419,258,765.86	9.498	12.117	\$ 12,497,453,039.64	0.27%
30-Jun-11	\$ 275,177,295.00	\$ 609,400,105.91	\$ 364,593,562.00	\$ 1,249,170,962.91	3.901	28.129	\$ 14,425,931,075.28	6.13%
30-Jun-12	\$ 219,384,625.95	\$ 472,585,931.00	\$ 407,397,565.00	\$ 1,099,368,121.95	7.474	3.141	\$ 15,593,671,153.51	4.44%
30-Jun-13	\$ 578,295,717.19	\$ 278,003,346.87	\$ 376,270,949.00	\$ 1,232,570,013.06	-0.688	17.925	\$ 16,831,962,065.85	5.09%
30-Jun-14	\$ 468,462,457.07	\$ 1,076,689,419.09	\$ 365,749,662.00	\$ 1,910,901,538.16	4.373	22.035	\$ 19,021,242,860.93	8.12%
30-Jun-15	\$ 619,680,999.17	\$ 439,497,170.33	\$ 422,603,960.00	\$ 1,481,782,129.50	1.858	5.248	\$ 19,686,833,839.44	5.38%
30-Jun-16	\$ (24,288,206.00)	\$ 449,818,215.84	\$ 443,470,960.00	\$ 869,000,969.84	6.001	1.733	\$ 19,554,644,211.95	2.18%
30-Jun-17	\$ 224,773,104.78	\$ 902,536,332.45	\$ 475,988,685.46	\$ 1,603,298,122.69	-0.315	15.463	\$ 20,711,391,539.59	5.44%

# Why we do not “Harvest” Capital Gains

- It reduces the amount of money that we have to invest which leads to lower income. If the \$900 million in unrealized gains were invested at the PMTF’s new long-term asset allocation, we project these funds would almost double over the course of a 10 year period, growing to \$1.6 billion. That would produce an additional \$94mm a year.
- PMTF’s mineral income is expected to be less than annual spending going forward, meaning the Fund will likely see declining mineral cash flows for the foreseeable future. Because of this, investment returns will become a significant contributor to future fund growth and preservation of long-term purchasing power.
- If we had a sustained bear market, we would have capital losses for many years. We would not be able to spend any gains until all losses were made up. This could take years!
- It is expensive! To buy and sell our equity portfolio to realize the capital gains would cost between 10-15 million dollars.

\*RVK



# Spending Model: Realized Gains

- The table illustrates the hypothetical growth of assets under management and dividends & interest.
  - Assumes a 50% spend policy of the historical realized gains.
  - Based upon the historical asset allocation and stock and bond yields.
  - AUM growth: \$1.37 billion; Total D&I: \$141.5 million

Date	50% Realized Spend	Realized Gains - WSTO	AUM	Total Fund Returns	Hypothetical Dividends & Interest	Hypothetical Gain Growth	Hypothetical AUM
Jun-05	-	-	6,507,766,340.08	7.69%	-		
Jun-06	-	-	8,191,200,820.14	3.93%	-	-	8,191,200,820.14
Jun-07	30,141,687.02	60,283,374.04	9,398,763,804.39	10.85%	-	-	9,398,763,804.39
Jun-08	153,592,679.19	307,185,358.37	11,171,106,916.60	3.90%	1,321,918.04	31,317,212.81	11,202,424,129.41
Jun-09	-	-	10,909,355,351.36	-6.39%	6,634,388.00	175,095,319.80	11,084,450,671.16
Jun-10	53,556,958.50	107,113,917.00	12,497,453,039.64	11.19%	4,633,553.94	175,095,319.80	12,672,548,359.44
Jun-11	137,588,647.50	275,177,295.00	14,425,931,075.28	12.02%	6,102,366.02	235,089,824.71	14,661,020,899.99
Jun-12	109,692,312.98	219,384,625.95	15,593,671,153.51	3.50%	7,916,178.97	377,494,074.87	15,971,165,228.38
Jun-13	289,147,858.60	578,295,717.19	16,831,962,065.85	5.11%	11,585,122.13	492,791,665.04	17,324,753,730.89
Jun-14	234,231,228.54	468,462,457.07	19,021,242,860.93	9.76%	17,644,484.35	810,160,354.63	19,831,403,215.57
Jun-15	309,840,499.59	619,680,999.17	19,686,833,839.44	2.20%	24,287,477.53	1,049,544,670.20	20,736,378,509.64
Jun-16	-	-	19,554,644,211.95	2.33%	28,074,867.04	1,366,604,453.42	20,921,248,665.37
Jun-17	112,386,552.39	224,773,104.78	20,711,391,539.59	5.75%	33,256,621.33	1,366,604,453.42	22,077,995,993.01
<b>Totals:</b>	1,430,178,424.29	2,860,356,848.57			141,456,977.36		

# Interfund Loans

## Current Process

### ➤ Source of Loan Proceeds

The legislature directs interfund loans from a variety of accounts: “pooled fund investments” (which the Treasurer’s Office refers to as the State Agency Pool (SAP)), legislative stabilization reserve account, general fund, budget reserve account, risk management pool, severance tax account and permanent funds.

### ➤ Lending from the State Agency Pool – 400+ Accounts

To provide an example of how the interfund loan process works, we will use an interfund loan from the SAP as it illustrates several of the issues related to these types of loans. 2016 Wyoming Session Laws, Chapter 31, Section 318(c) provides that the Auditor may borrow up to \$82,000,000 from the SAP for WYDOT cash flow needs. This interfund loan is interest free. Since the SAP is made up of over 400+ accounts, each account lends a pro rata portion of the loan to the borrowing agency or account. Thus, all accounts in the SAP are impacted by the interfund loan.

### ➤ Repayment of Loans

For our example, the legislation requires that WYDOT repay the loan “when sufficient revenue is available”. The Treasurer’s Office starts with the assumption that the loan will be paid off by the end of the current fiscal year. This prevents outstanding interfund loans to be shown on the books at the end of the fiscal year so that no adjustments are required for these loans.

### WYDOT LOAN EXAMPLE – CURRENT INTERFUND LOAN PROCESS:

#### SAP

- 400+ SAP accounts share this loan on a pro rata basis



**\$82,000,000**

- interest-free



#### WYDOT

- to “be repaid when sufficient revenue is available”

# Interfund Loans

## Problems with the Current Process

### ➤ **Loans Not Repaid By End of Fiscal Year**

For the first time, not all interfund loans were paid in full by the end of a fiscal year and the fiscal 2017 year Comprehensive Annual Financial Report (“CAFR”) will show outstanding interfund loan balances that have not been repaid. The auditors will be required to make a GAAP adjustment to reflect these outstanding balances.

### ➤ **Lending Accounts Lose Out on Both Interest Income from Interfund Loan and Investment Income**

Not only does the borrowing agency or account receive the interfund loan proceeds interest free but the borrower receives all the investment income that is earned on the interfund loan proceeds. (Even at a conservative interest rate of 2%, annual interest on an \$82,000,000 loan is \$1,640,000.) So the accounts that lent the money do not receive any interest *and* lose out on the investment income they would have otherwise earned if the money had not been lent.

### ➤ **Ramifications if Borrowing Agency or Account is Unable to Repay the Loan**

If a borrowing agency or account was ever unable to pay back the interfund loan, then the lending account would suffer a loss. In our example, all of the SAP accounts would suffer a loss of funds that were originally appropriated to them and which they would have included in their budgets for their expenses. These agencies would have to cut their expenses unless the legislature appropriated additional funds to cover the loss.

### **WYDOT LOAN EXAMPLE – PROBLEMS WITH CURRENT PROCESS:**

#### **WYDOT**

- pays no interest *and* receives investment income
- receives windfall if fails to repay

✖

#### **\$82,000,000**

- interest-free

✖

#### **SAP**

- receives no interest *and* loses out on investment income
- potential loss of principal necessary for budget purposes

# Interfund Loans

## One Potential Fix to Current Interfund Loan Problems

### ➤ **Borrow from the Legislative Stabilization Reserve Account**

One way to fix the problems noted on the prior slide is to have the proceeds for all interfund loans come from the legislative stabilization reserve account (LSRA) (except for education agencies and accounts which borrow funds for cash flow purposes from the Common School Permanent Land Fund) since the funds in the LSRA are not all appropriated for budget purposes. Thus, if a borrowing agency or account fails to repay the funds, there is less likely to be an impact on an agency or department's budget. Plus interfund loans from the LSRA reflect the purpose of the LSRA to account for shortfalls in the State's revenue.

### ➤ **Charge an Interest Rate to Reflect Opportunity Cost**

The borrowing agency or account should pay the LSRA an interest rate to compensate the LSRA for the investment income it will not receive on the loaned proceeds. The Treasurer's Office recommends an interest rate in an amount equal to the interest earned on the LSRA investments in the previous fiscal year. This interest rate would most closely reflect the investment income that the LSRA does not receive as the result of loaning the money.

### **WYDOT LOAN EXAMPLE – LOAN UNDER PROPOSED PROCESS:**

#### **LSRA**

- receives interest to recover lost investment income
- less impact on State budget if borrower fails to repay

→

**\$82,000,000**

- interest rate equal to LSRA return for prior fiscal year

→

#### **WYDOT**

- payment of the interest rate is balanced by investment income received on loan proceeds

# Interfund Loans

As of June 30, 2017

	<b>See Notes</b>	<b>Interest</b>		<b>Statutory</b>	<b>Outstanding</b>
<b>Interfund Loans</b>	<b>Next Page</b>	<b>Rate</b>		<b>Allotment</b>	<b>Investments</b>
					<b>Interest</b>
					<b>Paid</b>
<b><u>Permanent Mineral Trust Fund</u></b>					
Capitol Building Rehabilitation and Restoration Account (project completion)	A	0.00%		UNLIMITED **	-
Unemployment Compensation Fund	B	0.00%		20,000,000	-
<b><u>Common School Permanent Land Fund</u></b>					
School Foundation Interfund Loan (FY17 interest rate changes to 0%)	C	6.00%		UNLIMITED **	375,000,000
					15,133,334
<b><u>State Agency Pool (Pooled Investments)</u></b>					
General Fund Interfund Loan (ending June 2018)	D	0.00%		UNLIMITED **	100,000,000
Govenor Fire Fighting Interfund Loan (ending June 2018)	E	2.07%		20,000,000	-
Group Health Insurance Loan (ending June 2018)	F	2.07%		24,599,000	-
Hathaway Scholarship Loan (ending June 2018)	G	2.07%		UNLIMITED **	-
WYDOT Interfund Loan (ending June 2018)	H	2.07%		100,000,000	-
WYDOT Interfund Loan (ending June 2018)	I	0.00%		82,000,000	46,982,136
		2% or			
WYDOT Interfund Loan (effective 7-1-2018)	J	SAP Rate of Rtn		200,000,000	-
					-
<b><u>General Fund or Budget Reserve Account (Pooled Investments)</u></b>					
Any other fund or account to meet obligations	K	0.00%		60,000,000	-
Group Insurance Plan Coverage & Cost of Discontinuing Coverage	L	0.00%		60,000,000	-
<b><u>Legislative Stabilization Reserve Account (Pooled Investments)</u></b>					
Facilities Construction	M	0.00%		4,300,000	-
Strategic Investment and Projects Account (SIPA) Construction is this still in effect?	N	0.00%		150,000,000	-
<b><u>Severence Tax Account (Pooled Investments)</u></b>					
Budget Reserve Account (on June 30, 2018)	O	0.00%		104,550,000	-
					-
<b><u>Risk Management Pool</u></b>					
Veterinary Biosafety Levell III Laboratory	P	0.00%		UNLIMITED **	-
					-
<b>Total Interfund Loans</b>				<b>825,449,000</b>	<b>521,982,136</b>
					<b>15,133,334</b>
** Totals do not include figures for Unlimited Loans as this is unknown.					

# Interfund Loans

## Notes & Statutory References

### **Permanent Mineral Trust Fund**

- (A) Capitol Building Rehabilitation and Restoration Account under 2014 Wyoming Session Laws, Chapter 40, Sections 4(c) & 4(d);
- (B) Unemployment Compensation Fund under W.S. 27-3-303(d) & (e);

### **Common School Permanent Land Fund**

- (C) School Foundation Loan under W.S. 21-13-316;

### **State Agency Pool**

### **Pooled Investments**

- (D) General Fund Loan under 2016 Wyoming Session Laws, Chapter 31, Section 301(a);
- (E) Governor Fighting Wild Land Fires Loan under 2016 Wyoming Session Laws, Chapter 31, Section 318(a);
- (F) Group Health Insurance Loan under 2016 Wyoming Session Laws, Chapter 31, Section 318(b);
- (G) Hathaway Scholarship Loan under 2016 Wyoming Session Laws, Chapter 31, Section 302;
- (H) WYDOT Loan under 2016 Wyoming Session Laws, Chapter 31, Section 301(b);
- (I) WYDOT Loan under 2016 Wyoming Session Laws, Chapter 31, Section 318(c);
- (J) WYODOT Loan under W.S. 9-1-418;

# Interfund Loans

## Notes & Statutory References

### **General Fund or Budget Reserve Account**

- (K) Any other fund or account can borrow under W.S. 9-1-417;
- (L) Group Insurance Plan Coverage to School Districts under W.S. 9-3-205(e);

### **Legislative Stabilization Reserve Account (LSRA)**

- (M) Facilities Construction under 2017 Wyoming Session Laws, Chapter 78, Section 1(e);
- (N) Strategic Investment and Projects Account (SIPA) under 2016 Wyoming Session Laws, 2016, Chapter 97, Sections 8 & 9;

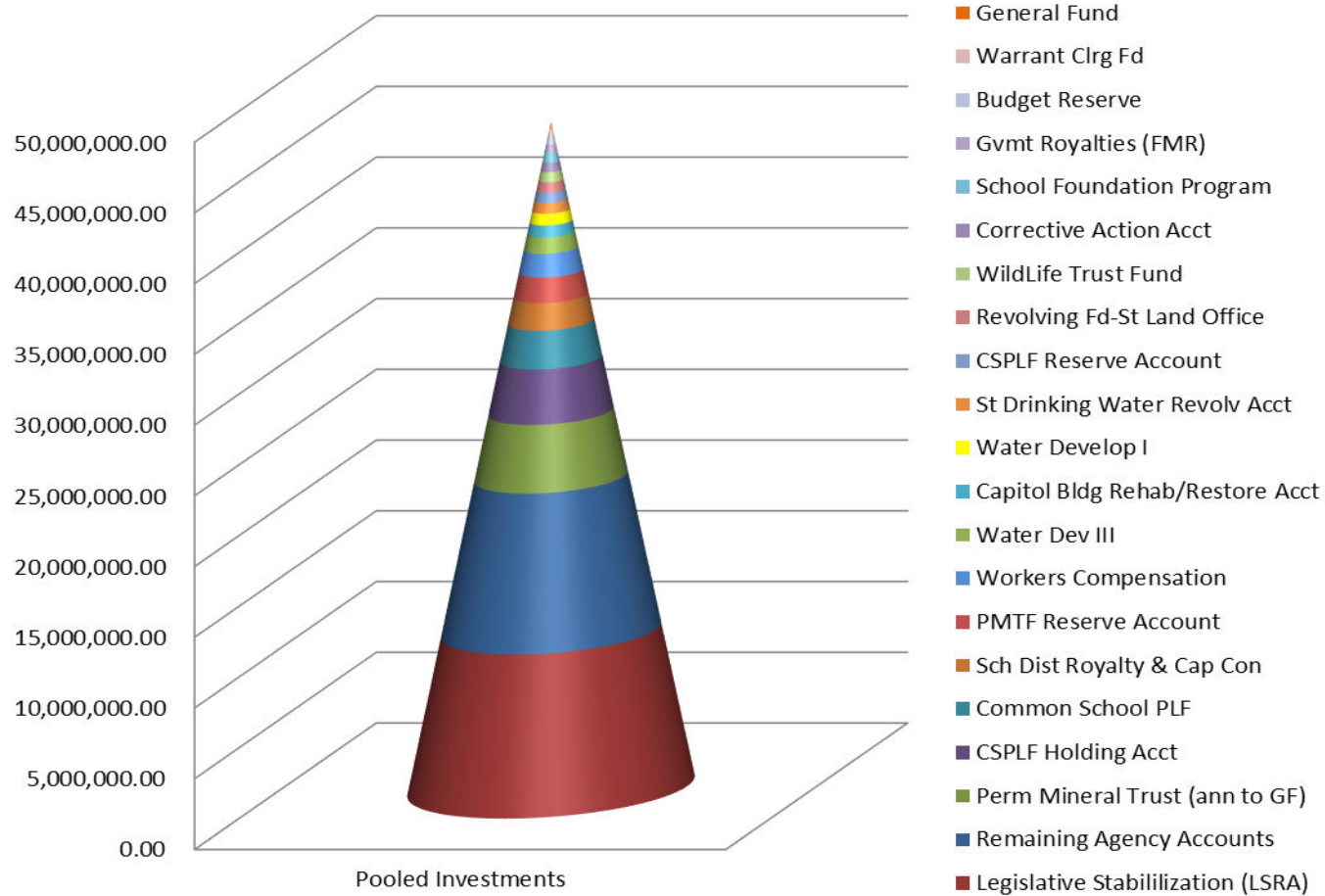
### **Severance Tax Account in (SAP)**

- (O) Budget Reserve Account (BRA) under 2016 Wyoming Session Laws, Chapter 31, Section 322;

### **Risk Management Pool Appropriation**

- (P) Veterinary Biosafety Level III Laboratory under 2016 Wyoming Session Laws, Chapter 97, Section 5.

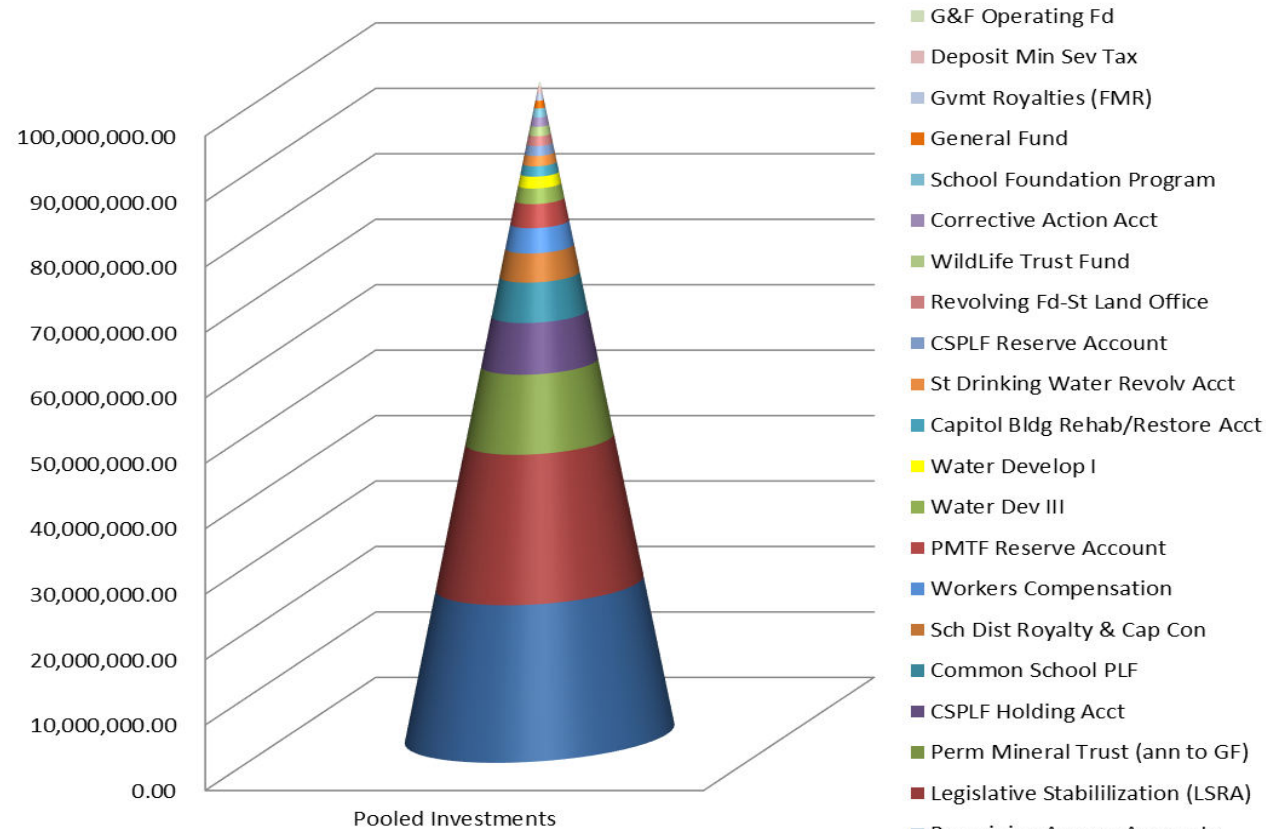
## WYDOT Interfund Loan (\$82M)



	Value	Opportunity Cost of Lost Interest
<b>(\$82mm from 8/10/16-12/7/16)</b>	82,000,000.00	606,144.00
<b>(\$46.9mm from 12/7/16-7/31/17)</b>		
General Fund	472,670.95	7,093.85
Warrant Clrg Fd	521,449.00	7,825.91
Budget Reserve	546,718.00	8,205.14
Gvmt Royalties (FMR)	593,887.00	8,913.06
School Foundation Program	644,170.00	9,667.70
Corrective Action Acct	644,753.00	9,676.45
WildLife Trust Fund	670,425.00	10,061.74
Revolving Fd-St Land Office	705,393.00	10,586.54
CSPLF Reserve Account	706,519.00	10,603.44
St Drinking Water Revolv Acct	713,950.00	10,714.96
Water Develop I	786,489.00	11,803.63
Capitol Bldg Rehab/Restore Acct	803,528.00	12,059.35
Water Dev III	1,105,565.00	16,592.32
Workers Compensation	1,611,187.00	24,180.69
PMTF Reserve Account	1,712,495.00	25,701.12
Sch Dist Royalty & Cap Con	1,865,332.00	27,994.90
Common School PLF	2,613,122.00	39,217.73
CSPLF Holding Acct	3,734,246.00	56,043.56
Perm Mineral Trust (ann to GF)	4,626,814.00	69,439.22
Remaining Agency Accounts	10,855,063.05	162,912.79
Legislative Stabililization (LSRA)	11,048,360.00	165,813.79
<b>Total:</b>	<b>705,107.90</b>	
<b>Total:</b>	<b>1,311,251.90</b>	



## General Fund Interfund Loan (\$100M)



(\$100mm from 3/1/17-7/31/17)	Value	Opportunity Cost of Lost Interest
G&F Operating Fd	1,019,761.79	9,593.92
Deposit Min Sev Tax	1,021,534.88	9,610.60
Gvmt Royalties (FMR)	1,086,197.77	10,218.95
General Fund	1,124,427.68	10,578.62
School Foundation Program	1,324,589.66	12,461.74
Corrective Action Acct	1,361,598.78	12,809.92
WildLife Trust Fund	1,378,576.54	12,969.65
Revolving Fd-St Land Office	1,442,048.95	13,566.80
CSPLF Reserve Account	1,452,794.45	13,667.89
St Drinking Water Revolv Acct	1,505,571.18	14,164.41
Capitol Bldg Rehab/Restore Acct	1,523,392.46	14,332.08
Water Develop I	1,733,945.49	16,312.96
Water Dev III	2,279,568.78	21,446.18
PMTF Reserve Account	3,521,356.30	33,128.92
Workers Compensation	3,691,951.94	34,733.88
Sch Dist Royalty & Cap Con	4,271,990.73	40,190.89
Common School PLF	5,912,145.94	55,621.47
CSPLF Holding Acct	7,561,744.09	71,140.89
Perm Mineral Trust (ann to GF)	11,716,744.42	110,231.13
Legislative Stabilization (LSRA)	22,014,496.14	207,112.38
Remaining Agency Accounts	23,055,562.03	216,906.73
<b>Total:</b>		<b>940,800.00</b>

# State Agency Pool Returns

- Returns are lower because of low or zero interest rate for interfund loans.
- Returns are lower because of increase of expenditures.
- Returns are lower because of change in asset allocation due to:
  - ☐ Liquidity
  - ☐ Risk

# Ramifications: State Agency Pool

- The New LT Target portfolio significantly reduces downside and interest rate risk, while earning a similar yield.

	Prior SAP Target	SAP Interim Alloc.	Difference	New LT Target	Difference
Expected Return (%)	3.74	3.67	-0.07	3.53	-0.21
Risk (Standard Deviation, %)	5.09	4.55	-0.54	3.92	-1.17
Return (Compound, %)	3.62	3.57	-0.05	3.46	-0.16
Return/Risk Ratio	0.73	0.81	+0.08	0.90	+0.17
RVK Liquidity Metric	83	80	-3	80	-3
Estimated Duration (Int. Rate Risk)	4.94	3.73	-1.21	2.72	-2.22
Estimated Yield (%)	2.82	2.92	+0.10	2.66	-0.16
Portfolio Stress Testing (Monte Carlo Results)					
1 Year Max Drawdown (2008-Like Event)	-\$579 M (-10.39%)	-\$543 M (-9.74%)	+\$36 M (+0.65%)	-\$463 M (-8.30%)	+\$116 M (+2.09%)
Median 1 Year Return	+\$230 M (+4.12%)	+\$226 M (+4.06%)	-\$4 M (-0.06%)	+\$215 M (+3.85%)	-\$15 M (-0.27%)
Probability of Achieving Various Real Return Targets					
1.00% Real Return Over 10 Years	58%	56%	-2%	52%	-6%
1.50% Real Return Over 10 Years	45%	42%	-3%	38%	-7%
2.00% Real Return Over 10 Years	32%	30%	-2%	24%	-8%

\* RVK: Differences may not sum exactly due to rounding. Expected returns do not assume active manager alpha. Estimated yields are a weighted average of the underlying asset class benchmarks as of 12/31/16. 1 Year Max Drawdown reflects the 1st percentile results. Dollar amounts are based on an initial portfolio value of \$5,736 M.

# Overview of Recent Changes to State Investment Policy

- Created separate sub-policies for each of the nine funds as a result of establishing a unique asset allocation for each fund
- Added new investment strategies related to the new asset allocations
- Addressed 2017 legislation including:
  - ❑ Investment funds committee
  - ❑ Change in equities cap to 70%
  - ❑ Creation of Pool A for non-permanent funds that can be invested in equities
- Allowance for a greater degree of internal management

# Investment Funds Committee

## **Investment Funds Selection Panel:**

- Lu Cordova, CEO, Corlund Industries, Former Chairman, Federal Reserve Bank of Kansas City
- Bill Ebzery, Investment Advisor, Cypress Management
- Timothy Mahieu, Senior Wealth Adviser, Level Four Wealth Management
- Bill Scarlett, Self-Employed, Commercial Real Estate Investment, Trustee Teton County School District #1
- Roy Whitney, Advisor, First Wyoming Capital Corp., Bank Director

## **Investment Funds Committee (IFC):**

- Treasurer's Office - Treasurer Mark Gordon
- Treasurer's Office - Patrick Fleming, CIO
- Governor's Office - Alex Kean, Administrator Economics Analysis Division
- Sam Masoudi, CIO Retirement System
- Vacant Position, appointment by the Selection Committee
- Vacant Position, appointment by the Selection Committee
- Vacant Position, appointment by the Selection Committee





# Monthly Investment Performance Analysis

Wyoming State Treasurer's Office

Period Ended: June 30, 2017



## Annual Asset Class Performance

**As of June 30, 2017**

Calendar Year Performance												Annualized Statistics (01/2006 - 06/2017)			
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	CYTD (As of 6/17)		Return	Standard Deviation	Sharpe Ratio
<div>Best</div> <div>↑</div> <div>Worst</div>	18.85	5.24	49.13	26.85	15.99	16.83	38.82	13.88	15.02	21.31	14.10	US Equity Custom Index - US All Cap	8.17	15.30	0.52
	18.11	3.06	45.12	21.74	14.26	16.76	32.39	13.69	13.33	13.00	11.48	S&P 500 Index - US Large Cap	8.21	15.27	0.52
	15.97	-5.22	34.63	16.77	11.16	16.35	32.39	12.50	5.59	12.74	10.36	Rusell 2000 Index - US Small Cap	8.14	19.34	0.45
	15.85	-6.46	32.46	16.36	7.84	16.13	24.96	11.82	1.38	11.96	9.34	MSCI ACW Index - Global	5.80	17.04	0.35
	11.66	-10.01	27.17	15.68	3.49	16.00	22.80	11.18	0.55	10.69	8.93	International Equity Custom Index - International	3.39	18.90	0.21
	11.63	-21.37	26.46	15.06	2.11	16.00	21.26	9.42	0.48	10.44	7.89	Cambridge US PE Index - Private Equity	11.36	8.78	1.17
	10.25	-22.48	26.46	15.06	2.11	14.96	15.29	5.97	0.18	9.94	4.99	NCREIF ODCE Index - Core Real Estate	6.59	8.12	0.70
	6.97	-23.62	21.98	13.11	0.66	13.43	13.94	4.89	-0.27	8.77	4.31	NCREIF Property Index - Value-Added Real Estate	7.57	5.61	1.17
	5.49	-33.79	13.22	12.67	-1.75	10.94	10.98	4.16	-1.47	7.97	3.51	HFRI FOF Comp Index	2.28	6.62	0.20
	5.49	-35.73	11.47	10.82	-4.18	10.77	8.96	3.37	-2.36	7.86	3.02	BofA ML All Cnvrts Index (All Qual) - Convertibles	7.38	13.62	0.51
	5.36	-37.00	5.93	9.28	-5.18	10.54	4.22	2.95	-3.24	4.50	2.86	Bloomberg US Agg Bond Index - Fixed Income	4.36	3.33	0.95
	4.53	-37.00	1.17	6.54	-5.72	4.79	0.12	0.18	-4.41	2.65	2.27	Credit Custom Index - Fixed Income	5.57	9.14	0.51
	2.76	-42.19	-16.85	5.70	-7.35	4.21	-2.02	-3.87	-5.66	0.51	1.55	JPM GBI-EM Gbl Dvf'd Index (USD) - EMD	5.49	11.19	0.44
-1.57	-43.06	-29.76	0.73	-13.71	0.26	-8.98	-5.72	-14.92	0.38	0.33	JP Morgan Cash Custom Index - Cash Equiv	1.49	0.94	1.29	

The Cambridge US Private Equity Index is shown for informational purposes only. Due to availability of data, current quarter performance assumes a 0.00% return. Calculations are based on a quarterly periodicity.



Wyoming State Treasurer's Office  
Asset Allocation, Performance & Schedule of Investable Assets

As of June 30, 2017

Asset Allocation & Performance			
	Allocation		Performance (%)
	Market Value (\$)	%	FYTD
<b>Total Fund</b>	<b>20,739,610,999</b>	<b>100.00</b>	<b>5.75</b>
<b>US Equity Composite</b>	<b>2,254,550,255</b>	<b>10.87</b>	<b>17.25</b>
State Street All Cap	1,468,388,420	7.08	17.26
Epoch	263,860,478	1.27	22.21
Lazard	319,270,163	1.54	12.38
UW Portfolio Mgmt Program	1,410,522	0.01	17.51
RBC	201,620,672	0.97	20.06
<b>Global Equity Composite</b>	<b>426,401,778</b>	<b>2.06</b>	<b>20.88</b>
Arrowstreet	426,401,778	2.06	20.88
<b>Int'l Equity Composite</b>	<b>1,672,665,173</b>	<b>8.07</b>	<b>20.61</b>
Internal International Equity Portfolio	160,143,255	0.77	20.09
Northern Trust	839,582,600	4.05	20.05
Fisher Investments	427,481,219	2.06	25.04
Manning & Napier	245,415,336	1.18	N/A
The Boston Company	42,764	0.00	N/A
<b>Private Equity Composite</b>	<b>578,247,454</b>	<b>2.79</b>	<b>N/A</b>
Access Venture Partners II	14,734,664	0.07	N/A
Cheyenne Equity Capital Fund, L.P.	297,895,319	1.44	N/A
Hamilton Lane Nowood Fund, L.P.	114,191,511	0.55	N/A
Neuberger Berman Sauger Fund, L.P.	151,425,960	0.73	N/A
<b>Real Estate Composite</b>	<b>853,285,290</b>	<b>4.11</b>	<b>N/A</b>
Clarion Lion	324,319,700	1.56	7.60
UBS Trumbull	272,122,890	1.31	4.64
Cornerstone	7,351,609	0.04	N/A
Heitman	103,364	0.00	N/A
M&G	62,795,681	0.30	N/A
Northwood	118,050,855	0.57	N/A

Asset Allocation & Performance			
	Allocation		Performance (%)
	Market Value (\$)	%	FYTD
SC Capital	15,107,578	0.07	N/A
TA Associates Realty	6,437,130	0.03	N/A
WestRiver	46,996,483	0.23	N/A
<b>Absolute Return Composite</b>	<b>509,887,358</b>	<b>2.46</b>	<b>6.21</b>
PAAMCO - Jackalope Fund	509,887,358	2.46	6.21
<b>Convertible Bonds Composite</b>	<b>517,843,821</b>	<b>2.50</b>	<b>15.29</b>
Allianz Global Investors	517,843,821	2.50	15.29
<b>Total Fixed Income Composite</b>	<b>11,576,302,141</b>	<b>55.82</b>	<b>0.94</b>
C.S. McKee	1,265,292,081	6.10	-0.14
JP Morgan Core	2,158,626,120	10.41	-0.44
PIMCO Core	2,220,137,910	10.70	0.19
Neuberger Berman Credit	939,349,147	4.53	5.43
Seix	965,016,793	4.65	7.15
Grosvenor Silvery Lupine Fund	323,650,989	1.56	11.14
Investec	213,007,182	1.03	6.39
Stone Harbor	204,548,478	0.99	5.80
State Street TIPS	713,634,440	3.44	-0.86
Internal Fixed Income Portfolio	2,573,039,000	12.41	0.62
<b>Cash Equivalents</b>	<b>1,538,608,117</b>	<b>7.42</b>	<b>0.51</b>
<b>Public Purpose Investments</b>	<b>811,819,612</b>	<b>3.91</b>	<b>N/A</b>

Schedule of Investable Assets - Total Fund Composite Ex Public Purpose Investments						
Periods Ending	Beginning Market Value (\$)	Net Cash Flow (\$)	Gain/Loss (\$)	Ending Market Value (\$)	% Return	Unit Value
<b>FYTD</b>	<b>19,212,720,624</b>	<b>-371,101,702</b>	<b>1,086,172,465</b>	<b>19,927,791,387</b>	<b>5.75</b>	<b>105.75</b>

Allocations may not sum up to 100% exactly due to rounding. Performance shown is net of fees. Investment manager fees are accounted for on a quarterly basis. Wyoming State Treasurer's Office fiscal year ends on June 30th.



Wyoming State Treasurer's Office  
Asset Allocation & Performance

As of June 30, 2017

	Allocation		Performance (%)										
	Market Value (\$)	%	MTD	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
<b>Total Fund</b>	<b>20,739,610,999</b>	<b>100.00</b>	<b>0.12</b>	<b>1.75</b>	<b>4.31</b>	<b>5.75</b>	<b>5.75</b>	<b>3.28</b>	<b>4.83</b>	<b>5.59</b>	<b>4.67</b>	<b>5.53</b>	<b>10/01/1996</b>
Wyoming State Actual Allocation Index			0.15	1.81	4.13	5.03	5.03	3.45	4.77	5.41	4.39	5.49	
Difference			-0.03	-0.06	0.18	0.72	0.72	-0.17	0.06	0.18	0.28	0.04	
<b>Total Equity Composite</b>	<b>4,353,617,206</b>	<b>20.99</b>	<b>0.51</b>	<b>4.30</b>	<b>10.80</b>	<b>18.93</b>	<b>18.93</b>	<b>5.63</b>	<b>11.52</b>	<b>11.88</b>	<b>4.96</b>	<b>6.63</b>	<b>01/01/2006</b>
Total Equity Custom Index			0.45	4.27	11.48	18.78	18.78	4.82	10.54	10.47	3.38	5.38	
Difference			0.06	0.03	-0.68	0.15	0.15	0.81	0.98	1.41	1.58	1.25	
<b>US Equity Composite</b>	<b>2,254,550,255</b>	<b>10.87</b>	<b>0.64</b>	<b>2.30</b>	<b>7.21</b>	<b>17.25</b>	<b>17.25</b>	<b>8.66</b>	<b>14.32</b>	<b>15.27</b>	<b>7.54</b>	<b>6.86</b>	<b>06/01/1997</b>
US Equity Custom Index			0.90	3.02	8.93	18.51	18.51	9.46	14.54	15.34	7.14	7.34	
Difference			-0.26	-0.72	-1.72	-1.26	-1.26	-0.80	-0.22	-0.07	0.40	-0.48	
<b>State Street All Cap</b>	<b>1,468,388,420</b>	<b>7.08</b>	<b>0.87</b>	<b>2.59</b>	<b>7.90</b>	<b>17.26</b>	<b>17.26</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>8.52</b>	<b>01/01/2015</b>
State Street All Cap Custom Index			0.88	2.63	7.94	17.41	17.41	9.03	14.60	15.33	7.51	8.62	
Difference			-0.01	-0.04	-0.04	-0.15	-0.15	N/A	N/A	N/A	N/A	-0.10	
Russell 3000 Index			0.90	3.02	8.93	18.51	18.51	9.10	14.58	15.34	7.26	8.77	
Difference			-0.03	-0.43	-1.03	-1.25	-1.25	N/A	N/A	N/A	N/A	-0.25	
<b>Epoch</b>	<b>263,860,478</b>	<b>1.27</b>	<b>0.15</b>	<b>2.90</b>	<b>10.44</b>	<b>22.21</b>	<b>22.21</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>8.29</b>	<b>11/01/2014</b>
Russell 3000 Index			0.90	3.02	8.93	18.51	18.51	9.10	14.58	15.34	7.26	9.18	
Difference			-0.75	-0.12	1.51	3.70	3.70	N/A	N/A	N/A	N/A	-0.89	
<b>Lazard</b>	<b>319,270,163</b>	<b>1.54</b>	<b>-0.88</b>	<b>1.56</b>	<b>7.19</b>	<b>12.38</b>	<b>12.38</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>8.68</b>	<b>11/01/2014</b>
Russell 3000 Index			0.90	3.02	8.93	18.51	18.51	9.10	14.58	15.34	7.26	9.18	
Difference			-1.78	-1.46	-1.74	-6.13	-6.13	N/A	N/A	N/A	N/A	-0.50	
<b>UW Portfolio Mgmt Program</b>	<b>1,410,522</b>	<b>0.01</b>	<b>1.01</b>	<b>4.06</b>	<b>10.08</b>	<b>17.51</b>	<b>17.51</b>	<b>9.18</b>	<b>12.01</b>	<b>10.66</b>	<b>2.17</b>	<b>2.66</b>	<b>04/01/2006</b>
S&P 500 Index (Cap Wtd)			0.62	3.09	9.34	17.90	17.90	9.61	14.63	15.41	7.18	8.00	
Difference			0.39	0.97	0.74	-0.39	-0.39	-0.43	-2.62	-4.75	-5.01	-5.34	
<b>RBC</b>	<b>201,620,672</b>	<b>0.97</b>	<b>2.14</b>	<b>0.60</b>	<b>-0.70</b>	<b>20.06</b>	<b>20.06</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>6.61</b>	<b>01/01/2015</b>
Russell 2000 Index			3.46	2.46	4.99	24.60	24.60	7.36	13.70	14.35	6.92	8.19	
Difference			-1.32	-1.86	-5.69	-4.54	-4.54	N/A	N/A	N/A	N/A	-1.58	
<b>Arrowstreet</b>	<b>426,401,778</b>	<b>2.06</b>	<b>-0.10</b>	<b>5.11</b>	<b>14.23</b>	<b>20.88</b>	<b>20.88</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>7.01</b>	<b>03/01/2015</b>
MSCI ACW Index (USD) (Net)			0.45	4.27	11.48	18.78	18.78	4.82	10.54	10.48	3.71	5.37	
Difference			-0.55	0.84	2.75	2.10	2.10	N/A	N/A	N/A	N/A	1.64	

Performance shown is net of fees. Investment manager fees are accounted for on a quarterly basis. Performance and market values shown are preliminary and subject to change. Performance is annualized for periods greater than one year.

Wyoming State Treasurer's Office  
Asset Allocation & Performance

As of June 30, 2017

	Allocation		Performance (%)										
	Market Value (\$)	%	MTD	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Int'l Equity Composite	1,672,665,173	8.07	0.48	6.91	15.27	20.61	20.61	1.06	7.52	7.22	1.34	5.79	01/01/2004
International Equity Custom Index			0.31	5.78	14.10	20.45	20.45	0.80	7.22	6.73	0.40	5.34	
Difference			0.17	1.13	1.17	0.16	0.16	0.26	0.30	0.49	0.94	0.45	
Internal International Equity Portfolio	160,143,255	0.77	0.45	5.79	14.69	20.09	20.09	N/A	N/A	N/A	N/A	18.49	02/01/2016
FTSE All Wrld Ex US Index (US Invstr) (USD) (Net)			0.21	5.65	13.95	20.53	20.53	1.33	7.68	7.04	1.60	19.16	
Difference			0.24	0.14	0.74	-0.44	-0.44	N/A	N/A	N/A	N/A	-0.67	
Northern Trust	839,582,600	4.05	0.31	5.81	14.16	20.05	20.05	0.79	7.24	N/A	N/A	5.49	08/01/2010
MSCI ACW Ex US Index (USD) (Net)			0.31	5.78	14.10	20.45	20.45	0.80	7.22	6.66	1.13	5.42	
Difference			0.00	0.03	0.06	-0.40	-0.40	-0.01	0.02	N/A	N/A	0.07	
Fisher Investments	427,481,219	2.06	0.42	8.71	18.00	25.04	25.04	3.28	8.64	8.81	2.61	7.15	09/01/2004
MSCI ACW Ex US Index (USD) (Net)			0.31	5.78	14.10	20.45	20.45	0.80	7.22	6.73	0.40	5.47	
Difference			0.11	2.93	3.90	4.59	4.59	2.48	1.42	2.08	2.21	1.68	
Core Real Estate Composite	596,442,590	2.88	1.39	1.39	3.15	6.23	6.23	10.48	10.20	11.71	4.01	5.63	01/01/2006
NCREIF ODCE Index (AWA) (Net)			1.49	1.49	3.06	6.92	6.92	10.34	10.77	12.03	4.29	5.77	
Difference			-0.10	-0.10	0.09	-0.69	-0.69	0.14	-0.57	-0.32	-0.28	-0.14	
Clarion Lion	324,319,700	1.56	1.74	1.74	4.22	7.60	7.60	11.82	11.28	13.38	3.47	5.09	01/01/2006
NCREIF ODCE Index (AWA) (Net)			1.49	1.49	3.06	6.92	6.92	10.34	10.77	12.03	4.29	5.77	
Difference			0.25	0.25	1.16	0.68	0.68	1.48	0.51	1.35	-0.82	-0.68	
UBS Trumbull	272,122,890	1.31	0.99	0.99	1.90	4.64	4.64	8.57	8.74	9.93	4.27	5.47	07/01/2006
NCREIF ODCE Index (AWA) (Net)			1.49	1.49	3.06	6.92	6.92	10.34	10.77	12.03	4.29	5.35	
Difference			-0.50	-0.50	-1.16	-2.28	-2.28	-1.77	-2.03	-2.10	-0.02	0.12	
Absolute Return Composite (Net)	509,887,358	2.46	0.50	0.77	2.82	6.21	6.21	0.52	4.52	4.13	N/A	2.41	12/01/2007
HFRI FOF Comp Index			-0.21	0.62	3.02	6.29	6.29	1.49	3.83	3.00	0.85	0.70	
Difference			0.71	0.15	-0.20	-0.08	-0.08	-0.97	0.69	1.13	N/A	1.71	
PAAMCO - Jackalope Fund (Net)	509,887,358	2.46	0.50	0.77	2.82	6.21	6.21	-0.17	4.57	3.92	N/A	2.15	12/01/2007
HFRI FOF Comp Index			-0.21	0.62	3.02	6.29	6.29	1.49	3.83	3.00	0.85	0.70	
Difference			0.71	0.15	-0.20	-0.08	-0.08	-1.66	0.74	0.92	N/A	1.45	

Performance shown is net of fees. Investment manager fees are accounted for on a quarterly basis. Performance and market values shown are preliminary and subject to change. Performance is annualized for periods greater than one year.

Wyoming State Treasurer's Office  
Asset Allocation & Performance

As of June 30, 2017

	Allocation		Performance (%)											
	Market Value (\$)	%	MTD	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date	
Total Fixed Income Composite	12,094,145,962	58.31	-0.08	1.18	2.66	1.49	1.49	2.27	2.46	3.54	4.78	5.52	10/01/1996	
Bloomberg US Agg Bond Index			-0.10	1.45	2.27	-0.31	-0.31	2.48	2.21	3.19	4.48	5.36		
Difference			0.02	-0.27	0.39	1.80	1.80	-0.21	0.25	0.35	0.30	0.16		
Total Fixed Income (Ex. Convertibles) Composite	11,576,302,141	55.82	-0.14	1.14	2.43	0.94	0.94	2.22	2.11	3.20	4.61	5.51	10/01/1996	
Bloomberg US Agg Bond Index			-0.10	1.45	2.27	-0.31	-0.31	2.48	2.21	3.19	4.48	5.36		
Difference			-0.04	-0.31	0.16	1.25	1.25	-0.26	-0.10	0.01	0.13	0.15		
US Fixed Income (Ex. Convertibles) Composite	10,835,095,492	52.24	-0.22	1.05	2.08	0.47	0.47	2.40	2.22	3.23	N/A	3.56	12/01/2009	
Bloomberg US Agg Bond Index			-0.10	1.45	2.27	-0.31	-0.31	2.48	2.21	3.19	4.48	3.43		
Difference			-0.12	-0.40	-0.19	0.78	0.78	-0.08	0.01	0.04	N/A	0.13		
Externally Mgd Fixed Income Composite	9,521,106,962	45.91	-0.05	1.31	2.78	1.58	1.58	2.30	2.52	3.76	4.85	5.26	10/01/1996	
Bloomberg US Agg Bond Index			-0.10	1.45	2.27	-0.31	-0.31	2.48	2.21	3.19	4.48	5.36		
Difference			0.05	-0.14	0.51	1.89	1.89	-0.18	0.31	0.57	0.37	-0.10		
Allianz Global Investors	517,843,821	2.50	1.31	2.84	8.08	15.29	15.29	3.68	10.17	10.85	7.54	5.66	09/01/2000	
BofA ML All Cnvrts Index (All Qual)			0.64	2.46	7.89	16.80	16.80	4.83	11.20	10.54	6.51	5.26		
Difference			0.67	0.38	0.19	-1.51	-1.51	-1.15	-1.03	0.31	1.03	0.40		
Core Fixed Income Composite	5,644,056,112	27.21	-0.14	1.41	2.14	-0.23	-0.23	2.43	N/A	N/A	N/A	1.97	01/01/2013	
Bloomberg US Agg Bond Index			-0.10	1.45	2.27	-0.31	-0.31	2.48	2.21	3.19	4.48	2.06		
Difference			-0.04	-0.04	-0.13	0.08	0.08	-0.05	N/A	N/A	N/A	-0.09		
C.S. McKee	1,265,292,081	6.10	-0.04	1.32	2.04	-0.14	-0.14	2.52	N/A	N/A	N/A	1.99	01/01/2013	
Bloomberg US Agg Bond Index			-0.10	1.45	2.27	-0.31	-0.31	2.48	2.21	3.19	4.48	2.06		
Difference			0.06	-0.13	-0.23	0.17	0.17	0.04	N/A	N/A	N/A	-0.07		
JP Morgan Core	2,158,626,120	10.41	-0.18	1.46	2.38	-0.44	-0.44	2.72	N/A	N/A	N/A	2.21	01/01/2013	
Bloomberg US Agg Bond Index			-0.10	1.45	2.27	-0.31	-0.31	2.48	2.21	3.19	4.48	2.06		
Difference			-0.08	0.01	0.11	-0.13	-0.13	0.24	N/A	N/A	N/A	0.15		
PIMCO Core	2,220,137,910	10.70	-0.16	1.41	2.38	0.19	0.19	2.59	N/A	N/A	N/A	1.93	01/01/2013	
Bloomberg US Agg Bond Index			-0.10	1.45	2.27	-0.31	-0.31	2.48	2.21	3.19	4.48	2.06		
Difference			-0.06	-0.04	0.11	0.50	0.50	0.11	N/A	N/A	N/A	-0.13		

Performance shown is net of fees. Investment manager fees are accounted for on a quarterly basis. Performance and market values shown are preliminary and subject to change. Performance is annualized for periods greater than one year.

Wyoming State Treasurer's Office  
Asset Allocation & Performance

As of June 30, 2017

	Allocation		Performance (%)										
	Market Value (\$)	%	MTD	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Credit Fixed Income Composite	1,904,365,940	9.18	-0.03	1.16	2.64	6.29	6.29	3.42	N/A	N/A	N/A	3.61	03/01/2013
Credit Custom Index			0.05	1.35	2.86	7.33	7.33	3.62	4.88	5.65	5.41	4.11	
Difference			-0.08	-0.19	-0.22	-1.04	-1.04	-0.20	N/A	N/A	N/A	-0.50	
Neuberger Berman Credit	939,349,147	4.53	-0.07	1.07	2.08	5.43	5.43	3.04	N/A	N/A	N/A	3.64	04/01/2013
Credit Custom Index			0.05	1.35	2.86	7.33	7.33	3.62	4.88	5.65	5.41	4.02	
Difference			-0.12	-0.28	-0.78	-1.90	-1.90	-0.58	N/A	N/A	N/A	-0.38	
Seix	965,016,793	4.65	0.02	1.24	2.86	7.15	7.15	3.68	N/A	N/A	N/A	3.72	05/01/2013
Credit Custom Index			0.05	1.35	2.86	7.33	7.33	3.62	4.88	5.65	5.41	3.83	
Difference			-0.03	-0.11	0.00	-0.18	-0.18	0.06	N/A	N/A	N/A	-0.11	
Grosvenor Silvery Lupine Fund	323,650,989	1.56	0.61	1.71	4.59	11.14	11.14	6.05	N/A	N/A	N/A	6.05	07/01/2014
CS Western Eur Hi Yld Index			0.24	2.60	5.06	12.21	12.21	5.70	8.83	8.91	8.01	5.70	
Difference			0.37	-0.89	-0.47	-1.07	-1.07	0.35	N/A	N/A	N/A	0.35	
Emerging Market Debt Fixed Income Composite	417,555,660	2.01	0.34	3.07	10.70	6.10	6.10	-3.76	N/A	N/A	N/A	-4.18	03/01/2013
JPM GBI-EM Gbl Dvf'd Index (USD) (Unhedged)			0.46	3.62	10.36	6.41	6.41	-2.80	-0.67	1.86	3.97	-2.84	
Difference			-0.12	-0.55	0.34	-0.31	-0.31	-0.96	N/A	N/A	N/A	-1.34	
Investec	213,007,182	1.03	0.34	3.03	11.14	6.39	6.39	-3.58	N/A	N/A	N/A	-3.37	04/01/2013
JPM GBI-EM Gbl Dvf'd Index (USD) (Unhedged)			0.46	3.62	10.36	6.41	6.41	-2.80	-0.67	1.86	3.97	-2.78	
Difference			-0.12	-0.59	0.78	-0.02	-0.02	-0.78	N/A	N/A	N/A	-0.59	
Stone Harbor	204,548,478	0.99	0.34	3.12	10.24	5.80	5.80	-3.95	N/A	N/A	N/A	-4.39	04/01/2013
JPM GBI-EM Gbl Dvf'd Index (USD) (Unhedged)			0.46	3.62	10.36	6.41	6.41	-2.80	-0.67	1.86	3.97	-2.78	
Difference			-0.12	-0.50	-0.12	-0.61	-0.61	-1.15	N/A	N/A	N/A	-1.61	
State Street TIPS	713,634,440	3.44	-0.98	-0.41	0.69	-0.86	-0.86	0.73	N/A	N/A	N/A	-0.36	01/01/2013
Bloomberg US Trsy: US TIPS Index (Series B)			-0.98	-0.41	0.95	-0.67	-0.67	0.71	0.29	2.97	4.34	-0.32	
Difference			0.00	0.00	-0.26	-0.19	-0.19	0.02	N/A	N/A	N/A	-0.04	
Internal Fixed Income Portfolio	2,573,039,000	12.41	-0.22	0.67	1.70	0.62	0.62	1.95	1.58	1.97	3.20	4.81	10/01/1996
Bloomberg US Gov't: Int. Term Bond Index			-0.26	0.66	1.20	-1.25	-1.25	1.47	1.07	1.85	3.36	4.82	
Difference			0.04	0.01	0.50	1.87	1.87	0.48	0.51	0.12	-0.16	-0.01	

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**Wyoming State Treasurer's Office**  
**Asset Allocation & Performance**

As of June 30, 2017

	Allocation		Performance (%)										
	Market Value (\$)	%	MTD	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
JP Morgan Cash Composite	1,538,608,117	7.42	0.07	0.23	0.42	0.51	0.51	0.35	0.27	0.29	0.94	1.49	01/01/2006
JP Morgan Cash Custom Index			0.07	0.21	0.33	0.37	0.37	0.33	0.27	0.33	0.98	1.49	
Difference			0.00	0.02	0.09	0.14	0.14	0.02	0.00	-0.04	-0.04	0.00	
Wyo-Star Cash Composite	658,161,677	3.17	0.04	0.20	0.39	0.36	0.36	0.38	0.31	0.35	1.08	3.39	10/01/1996
Wyo-Star Cash Custom Index			0.05	0.23	0.36	0.31	0.31	0.36	0.33	0.40	1.09	2.73	
Difference			-0.01	-0.03	0.03	0.05	0.05	0.02	-0.02	-0.05	-0.01	0.66	

- Wyoming State Treasurer's Office fiscal year ends on June 30th.
- Since Inception date shown represents the first full month following initial funding.
- The Wyoming State Actual Allocation Index is calculated using beginning month asset class weights applied to the appropriate asset class benchmark return.
- The Total Equity Index consists of the MSCI World Index through July 2010 and the MSCI ACW Index thereafter.
- The US Equity Index consists of the S&P 500 Index through September 2014 and the Russell 3000 Index thereafter.
- The International Equity Custom Index and Fisher Index both consist of the MSCI EAFE Index (Gross) through July 2010 and the MSCI ACW Ex US Index (USD) (Net) thereafter.
- The Credit Custom Index consists of 20% Bloomberg US Credit Index, 20% BofA ML US HY Master II Const. Index, and 60% S&P/LSTA Leveraged Loan Index.
- The Internal Fixed Income Portfolio Index consists of the Bloomberg US Gov't: Int. Term Bond Index; prior to December 2009 the index consisted of the Bloomberg US Gov't/Credit Bond Index.
- The State Street All Cap Custom Index consists of 69% Russell 3000 Index, 24% FTSE RAFI US 1000 Index, and 7% MSCI US Min Vol Index (USD) (Gross).
- Performance shown for the JP Morgan Cash Composite and the Wyo-Star Cash Composite consists of the respective operating and extended cash accounts.
- The JP Morgan Cash Custom Index is calculated monthly using beginning of the month investment weights applied to each corresponding primary benchmark return. Currently, the primary benchmark for JP Morgan Cash is the BofA ML 3 Mo US T-Bill Index and for JP Morgan Extd is the JP Morgan Blended Index.
- The Wyo-Star Cash Custom Index is calculated monthly using beginning of the month investment weights applied to each corresponding primary benchmark return. Currently, the primary benchmark for Wyo-Star Cash is the BofA ML 3 Mo US T-Bill Index and for Wyo-Star Extd is the JP Morgan Blended Index.

Performance shown is net of fees. Investment manager fees are accounted for on a quarterly basis. Performance and market values shown are preliminary and subject to change. Performance is annualized for periods greater than one year.



PORTLAND

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# Performance vs. Benchmark

	Account	Allocation FY 2017		Performance FY 2017	
		Market Value (\$)	(%)	(%)	(\$)
1.	State Street All Cap	1,468,388,420.00	7.08		
	State Street All Cap Custom Index			-0.15	-2,202,582.63
	Russell 3000 Index			-1.25	-18,354,855.25
2.	Epoch	263,860,478.00	1.27		
	Russell 3000 Index			3.7	9,762,837.69
3.	Lazard	319,270,163.00	1.54		
	Russell 3000 Index			-6.13	-19,571,260.99
4.	UW Portfolio Mgmt Program	1,410,522.00	0.01		
	S&P 500 Index (Cap Wtd)			-0.39	-5,501.04
5.	RBC	201,620,672.00	0.97		
	Russell 2000 Index			-4.54	-9,153,578.51
6.	Arrowsstreet	426,401,778.00	2.06		
	MSCI ACW Index (USD) (Net)			2.1	8,954,437.34
7.	Internal International Equity Portfolio	160,143,255.00	0.77		
	FTSE All Wrld Ex US Index (US Invstr) (USD) (Net)			-0.44	-704,630.32
8.	Northern Trust	839,582,600.00	4.05		
	MSCI ACW Ex US Index (USD) (Net)			-0.4	-3,358,330.40
9.	Fisher Investments	427,481,219.00	2.06		
	MSCI ACW Ex US Index (USD) (Net)			4.59	19,621,387.95
10.	Allianz Global Investors	517,843,821.00	2.5		
	BofA ML All Cnvrts Index (All Qual)			-1.51	-7,819,441.70

	Account	Allocation FY 2017		Performance FY 2017	
		Market Value (\$)	(%)	(%)	(\$)
11.	C.S. McKee	1,265,292,081.00	6.1		
	Bloomberg US Agg Bond Index			0.17	2,150,996.54
12.	JP Morgan Core	2,158,626,120.00	10.41		
	Bloomberg US Agg Bond Index			-0.13	-2,806,213.96
13.	PIMCO Core	2,220,137,910.00	10.7		
	Bloomberg US Agg Bond Index			0.5	11,100,689.55
14.	Neuberger Berman Credit	939,349,147.00	4.53		
	Credit Custom Index			-1.9	-12,860,133.79
15.	Seix	965,016,793.00	4.65		
	Credit Custom Index			-0.18	-1,264,530.23
16.	Grosvenor Silvery Lupine Fund	323,650,989.00	1.56		
	CS Western Eur Hi Yld Index			-1.07	-3,463,065.58
17.	Investec	213,007,182.00	1.03		
	JPM GBI-EM Gbl Dvf'd Index (USD) (Unhedged)			-0.02	-42,601.44
18.	Stone Harbor	204,548,478.00	0.99		
	JPM GBI-EM Gbl Dvf'd Index (USD) (Unhedged)			-0.61	-1,247,745.72
19.	State Street TIPS	713,634,440.00	3.44		
	Bloomberg US Trsy: US TIPS Index (Series B)			-0.19	-1,355,905.44
20.	Internal Fixed Income Portfolio	2,573,039,000.00	12.41		
	Bloomberg US Gov't: Int. Term Bond Index			1.87	34,090,829.30
21.	JP Morgan Cash Composite	1,538,608,117.00	7.42		
	JP Morgan Cash Custom Index			0.14	2,154,051.36
				Total:	21,979,708.00

**Wyoming State Treasurer's Office**  
**Total Fund - Direct (Mgmt) & Indirect (Incentive) Investment Fees**  
**FY 2016 and Estimated FY 2017**

	FY 2016			FY 2017 (ESTIMATE)					Difference vs. FY 2016		
	Total Fees	Mgmt Fee	Incentive Fee	Total Fees	Mgmt Fee	Incentive Fee	Fees Held Constant from FY 2016	Includes 2Q17 Estimate?	Total Fees	Mgmt Fee	Incentive Fee
<b>Wyoming State Total Fund</b>	<b>\$75,888,551</b>	<b>\$66,681,858</b>	<b>\$9,206,693</b>	<b>\$70,730,310</b>	<b>\$61,523,617</b>	<b>\$9,206,693</b>	<b>Partial</b>	<b>Partial</b>	<b>-\$5,158,241</b>	<b>-\$5,158,241</b>	<b>\$0</b>
% of Beginning WSTO FY Value	0.39%	0.34%	0.05%	0.36%	0.31%	0.05%	N/A	N/A	-0.02%	-0.02%	0.00%
Percentage of Total Fee	100%	88%	12%	100%	87%	13%	N/A	N/A	0%	-1%	1%
<b>US Equity</b>	<b>\$5,173,961</b>	<b>\$5,173,961</b>	<b>\$0</b>	<b>\$4,637,866</b>	<b>\$4,637,866</b>	<b>\$0</b>	<b>No</b>	<b>Yes</b>	<b>-\$536,095</b>	<b>-\$536,095</b>	<b>\$0</b>
State Street All Cap	\$322,832	\$322,832	\$0	\$323,744	\$323,744	\$0	No	Yes	\$912	\$912	\$0
Epoch	\$1,458,389	\$1,458,389	\$0	\$1,278,536	\$1,278,536	\$0	No	Yes	-\$179,853	-\$179,853	\$0
Lazard	\$1,624,712	\$1,624,712	\$0	\$1,693,936	\$1,693,936	\$0	No	Yes	\$69,225	\$69,225	\$0
RBC	\$1,768,028	\$1,768,028	\$0	\$1,341,650	\$1,341,650	\$0	No	Yes	-\$426,379	-\$426,379	\$0
<b>Global Equity</b>	<b>\$2,033,347</b>	<b>\$2,033,347</b>	<b>\$0</b>	<b>\$2,026,695</b>	<b>\$2,026,695</b>	<b>\$0</b>	<b>No</b>	<b>Yes</b>	<b>-\$6,653</b>	<b>-\$6,653</b>	<b>\$0</b>
Arrowstreet	\$2,033,347	\$2,033,347	\$0	\$2,026,695	\$2,026,695	\$0	No	Yes	-\$6,653	-\$6,653	\$0
<b>International Equity</b>	<b>\$3,971,061</b>	<b>\$3,971,061</b>	<b>\$0</b>	<b>\$3,433,401</b>	<b>\$3,433,401</b>	<b>\$0</b>	<b>No</b>	<b>Yes</b>	<b>-\$537,660</b>	<b>-\$537,660</b>	<b>\$0</b>
Internal International Equity Portfolio	\$50,996	\$50,996	\$0	\$108,284	\$108,284	\$0	No	Yes	\$57,288	\$57,288	\$0
Northern Trust	\$267,647	\$267,647	\$0	\$256,255	\$256,255	\$0	No	Yes	-\$11,392	-\$11,392	\$0
Manning & Napier	\$1,275,268	\$1,275,268	\$0	\$1,261,720	\$1,261,720	\$0	No	Yes	-\$13,548	-\$13,548	\$0
Fisher Investments	\$2,015,616	\$2,015,616	\$0	\$1,807,141	\$1,807,141	\$0	No	Yes	-\$208,475	-\$208,475	\$0
The Boston Company	\$361,534	\$361,534	\$0	\$0	\$0	\$0	No	Yes	-\$361,534	-\$361,534	\$0
<b>Private Equity</b>	<b>\$13,252,717</b>	<b>\$10,603,431</b>	<b>\$2,649,285</b>	<b>\$13,252,717</b>	<b>\$10,603,431</b>	<b>\$2,649,285</b>	<b>Yes</b>	<b>N/A</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
Access Venture Partners II	\$267,676	\$188,236	\$79,440	\$267,676	\$188,236	\$79,440	Yes	N/A	\$0	\$0	\$0
Cheyenne Capital Fund	\$8,453,387	\$6,383,776	\$2,069,611	\$8,453,387	\$6,383,776	\$2,069,611	Yes	N/A	\$0	\$0	\$0
Hamilton Lane Nowood Fund	\$2,128,537	\$2,161,419	-\$32,882	\$2,128,537	\$2,161,419	-\$32,882	Yes	N/A	\$0	\$0	\$0
Neuberger Berman Sauger Fund	\$2,403,116	\$1,870,000	\$533,116	\$2,403,116	\$1,870,000	\$533,116	Yes	N/A	\$0	\$0	\$0
<b>Real Estate</b>	<b>\$11,745,924</b>	<b>\$8,015,045</b>	<b>\$3,730,879</b>	<b>\$11,745,924</b>	<b>\$8,015,045</b>	<b>\$3,730,879</b>	<b>Yes</b>	<b>N/A</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
Clarion Lion Properties Fund	\$2,187,070	\$2,187,070	\$0	\$2,187,070	\$2,187,070	\$0	Yes	N/A	\$0	\$0	\$0
UBS Trumbull Property Fund	\$2,062,483	\$1,541,338	\$521,145	\$2,062,483	\$1,541,338	\$521,145	Yes	N/A	\$0	\$0	\$0
Cornerstone Core Mortgage Fund I	\$68,994	\$68,994	\$0	\$68,994	\$68,994	\$0	Yes	N/A	\$0	\$0	\$0
Heitman Value Partners II	\$22,350	\$22,350	\$0	\$22,350	\$22,350	\$0	Yes	N/A	\$0	\$0	\$0
M&G Real Estate Debt Fund II	\$719,985	\$631,787	\$88,198	\$719,985	\$631,787	\$88,198	Yes	N/A	\$0	\$0	\$0
Northwood Real Estate Partners IV	\$5,962,960	\$2,841,424	\$3,121,536	\$5,962,960	\$2,841,424	\$3,121,536	Yes	N/A	\$0	\$0	\$0
SC Capital Core Fund	\$0	\$0	\$0	\$0	\$0	\$0	Yes	N/A	\$0	\$0	\$0
TA Realty VIII	\$114,379	\$114,379	\$0	\$114,379	\$114,379	\$0	Yes	N/A	\$0	\$0	\$0
WestRiver Real Estate Finance Fund	\$607,703	\$607,703	\$0	\$607,703	\$607,703	\$0	Yes	N/A	\$0	\$0	\$0
<b>Absolute Return</b>	<b>\$10,222,642</b>	<b>\$8,480,344</b>	<b>\$1,742,298</b>	<b>\$10,222,642</b>	<b>\$8,480,344</b>	<b>\$1,742,298</b>	<b>Yes</b>	<b>N/A</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
PAAMCO	\$10,222,642	\$8,480,344	\$1,742,298	\$10,222,642	\$8,480,344	\$1,742,298	Yes	N/A	\$0	\$0	\$0
<b>Convertible Bonds</b>	<b>\$2,823,817</b>	<b>\$2,823,817</b>	<b>\$0</b>	<b>\$2,968,509</b>	<b>\$2,968,509</b>	<b>\$0</b>	<b>No</b>	<b>Yes</b>	<b>\$144,692</b>	<b>\$144,692</b>	<b>\$0</b>
Allianz Global Investors	\$2,823,817	\$2,823,817	\$0	\$2,968,509	\$2,968,509	\$0	No	Yes	\$144,692	\$144,692	\$0
<b>Fixed Income</b>	<b>\$25,648,596</b>	<b>\$24,564,366</b>	<b>\$1,084,230</b>	<b>\$21,820,241</b>	<b>\$20,736,011</b>	<b>\$1,084,230</b>	<b>No</b>	<b>Yes</b>	<b>-\$3,828,355</b>	<b>-\$3,828,355</b>	<b>\$0</b>
C.S. McKee	\$1,068,998	\$1,068,998	\$0	\$1,603,999	\$1,603,999	\$0	No	Yes	\$535,001	\$535,001	\$0
JP Morgan Core	\$2,300,895	\$2,300,895	\$0	\$2,240,716	\$2,240,716	\$0	No	Yes	-\$60,179	-\$60,179	\$0
MacKay Shields	\$2,312,281	\$2,312,281	\$0	\$68,905	\$68,905	\$0	No	Yes	-\$2,243,376	-\$2,243,376	\$0
Neuberger Berman Core	\$1,695,091	\$1,695,091	\$0	\$811,395	\$811,395	\$0	No	Yes	-\$883,696	-\$883,696	\$0
PIMCO Core	\$4,120,186	\$4,120,186	\$0	\$2,392,057	\$2,392,057	\$0	No	Yes	-\$1,728,129	-\$1,728,129	\$0
Wells Capital	\$1,256,295	\$1,256,295	\$0	\$1,145,479	\$1,145,479	\$0	No	Yes	-\$110,816	-\$110,816	\$0
Neuberger Berman Credit	\$1,593,719	\$1,593,719	\$0	\$2,195,572	\$2,195,572	\$0	No	Yes	\$601,852	\$601,852	\$0
Seix	\$2,132,306	\$2,132,306	\$0	\$2,500,756	\$2,500,756	\$0	No	Yes	\$368,450	\$368,450	\$0
Grosvenor Silvery Lupine	\$6,317,560	\$5,233,330	\$1,084,230	\$6,317,560	\$5,233,330	\$1,084,230	Yes	N/A	\$0	\$0	\$0
Investec	\$1,244,678	\$1,244,678	\$0	\$1,257,001	\$1,257,001	\$0	No	Yes	\$12,323	\$12,323	\$0
Stone Harbor	\$1,445,412	\$1,445,412	\$0	\$1,122,470	\$1,122,470	\$0	No	Yes	-\$322,942	-\$322,942	\$0
State Street TIPS	\$161,175	\$161,175	\$0	\$164,332	\$164,332	\$0	No	Yes	\$3,157	\$3,157	\$0
Internal Fixed Income Portfolio	\$0	\$0	\$0	\$0	\$0	\$0	N/A	N/A	\$0	\$0	\$0
<b>Cash &amp; Cash Equivalents</b>	<b>\$1,016,486</b>	<b>\$1,016,486</b>	<b>\$0</b>	<b>\$622,315</b>	<b>\$622,315</b>	<b>\$0</b>	<b>No</b>	<b>Yes</b>	<b>-\$394,170</b>	<b>-\$394,170</b>	<b>\$0</b>
JP Morgan Cash Composite	\$1,016,486	\$1,016,486	\$0	\$622,315	\$622,315	\$0	No	Yes	-\$394,170	-\$394,170	\$0

Estimated FY 2017 fees for Private Equity, Real Estate, Absolute Return, and Opportunistic Fixed Income represent fees paid in the 2016 fiscal year.

Fees are based on actual quarterly fees paid and were provided by Investment Managers and records of the Treasurer's Office.

Mgmt fees are fees charged for the costs of running the investment. These include both fees paid via explicit invoice and fees paid directly out of the investment itself.

Fund of fund management fees shown include management fees for the fund of fund and underlying fund levels.

Incentive fees are fees that are dependent on the manager's performance over a given period. These fees are typically paid from a portion of investment profits.



# Benchmark fee structure

		Date	AUM (in Billions)	AUM excluding PPIs (in Billions)	Mgmt. Fee (in Millions)	Basis Points excluding PPIs		Incentive Fee (in Millions)	Basis Points
1	Actual	6/30/2015	\$19.2	\$18.9	\$65.6	36		\$9.2	5
2	Actual	6/30/2016	\$19.1	\$18.7	\$66.7	36		\$9.2	5
3	Estimate	6/30/2017	\$20.6	\$19.8	\$61.5	31		\$9.2	5
4	If assets increased to:			\$25.0	\$77.5	31			
5	If assets decreased to:			\$15.0	\$46.5	31			

For benchmarking purposes, we will show the total dollars in management fees and the percentage allocation for June 30, 2016. Fiscal year 2016 will act as the benchmark for all future budget calculations. This equates to 36 basis points of the fund's total AUM. In 2016, the amount was \$66.68 million.

Currently, we are estimated to spend \$61.5mm in fees for Fiscal 2017. The amount we will be able to spend for our buildout will be:

*2016 = \$66.68 million in fees*

*2017 Estimated Fee = \$61.5 million*

*Funding amount = \$66.68mm (2016) - \$61.52mm (2017 est.) = \$5.16mm x .5 (50%) = \$2.58mm*

We may be able to save more as the year goes on thus returning even more to the State and reaching the \$3 million cap for the buildout.

**EXAMPLE** - In the future, if total asset under management (minus PPIs) = \$25 billion

*\$25 billion X 36 basis points = \$90mm in management fees.* This is the amount used in the base calculation.

If our management fee stayed at 31 basis points, then our spending amount would be:

*\$25 billion x 31 basis points = \$77.5 million*

*\$90 million – \$77.5mm = \$12.5mm x 50% = \$6.25mm*

In this case, we could only spend \$3mm as that is our annual cap, and the rest would revert to the State.

# Additional Materials

1. SLIB Matter D-2: State Investment Policy Annual Review and Update
2. SLIB Matter D-4: State Investment Allocation Presentation
3. SLIB Matter D-5: State Investment Allocation Changes
4. Howard Marks White Paper
5. Public Purpose Investments
6. Large Project Loan Program:
  - ☐ Potential Legislative Changes
  - ☐ Progress of Projects